

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig.1.

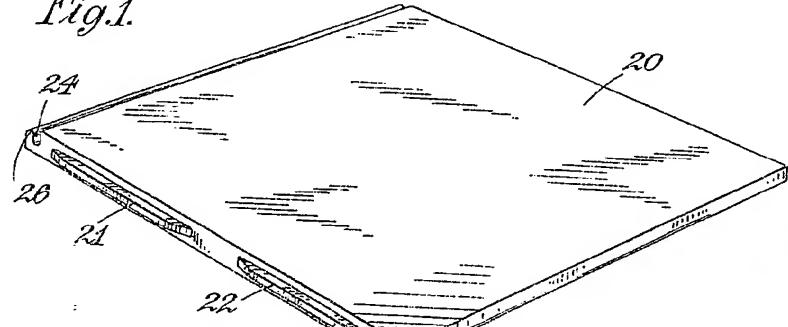


Fig.2.

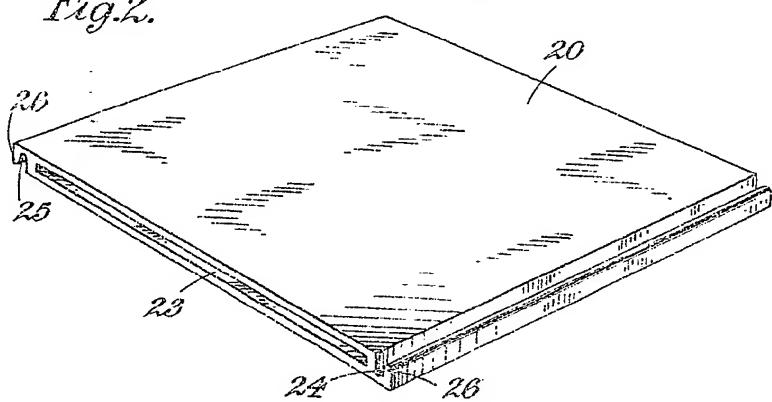


Fig.4.

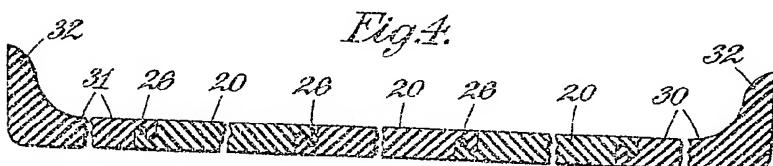
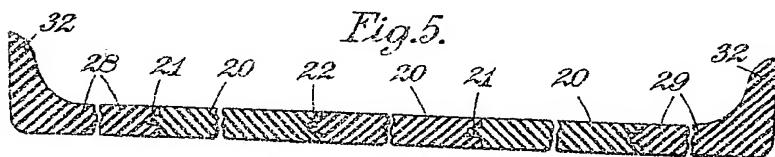


Fig.5.



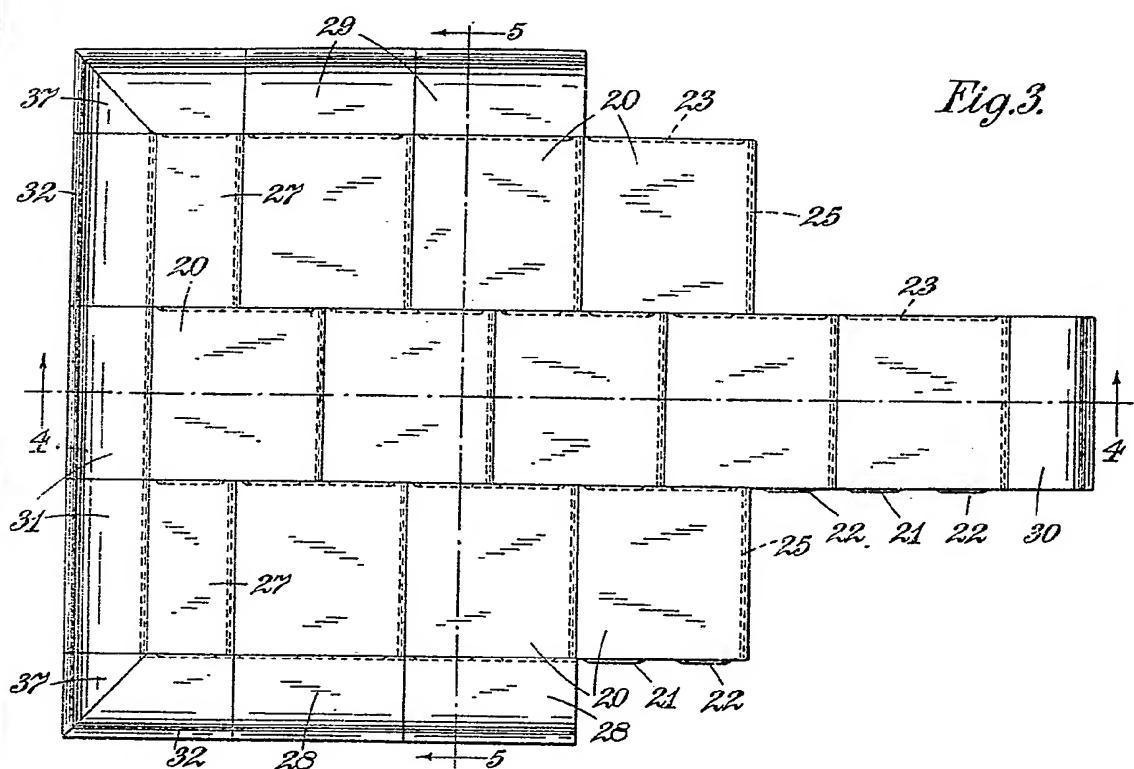
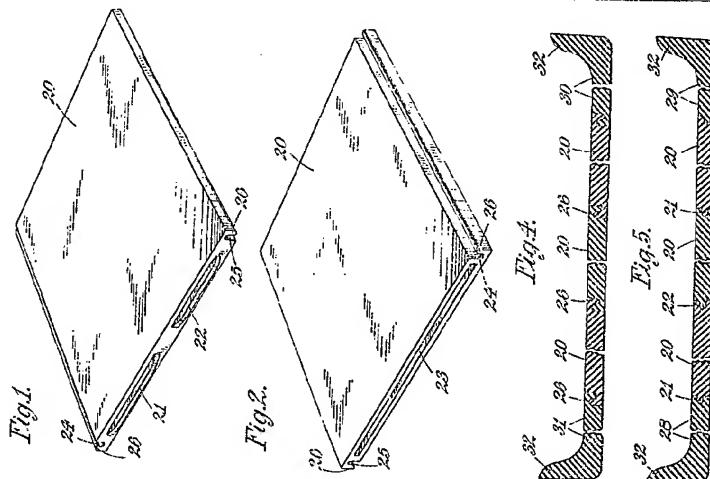


Fig. 3.

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Fig.6.

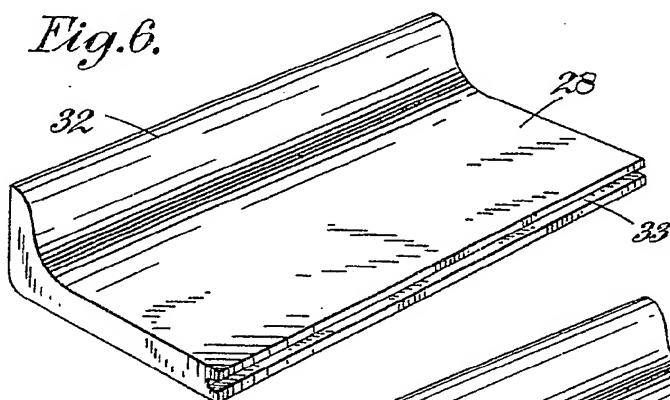


Fig.7.

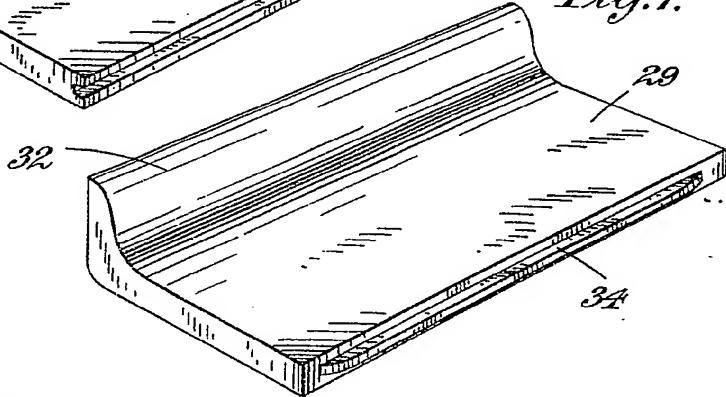


Fig.8.

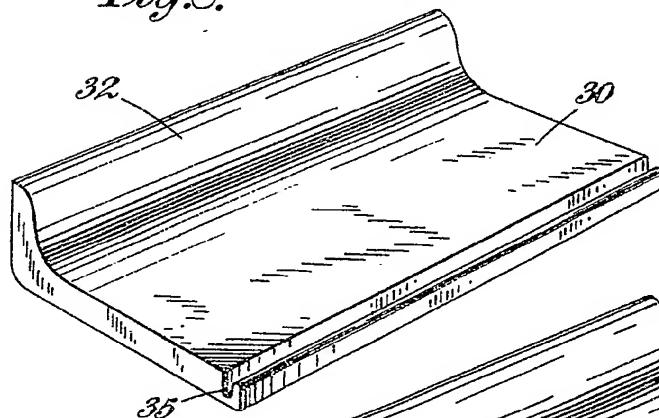
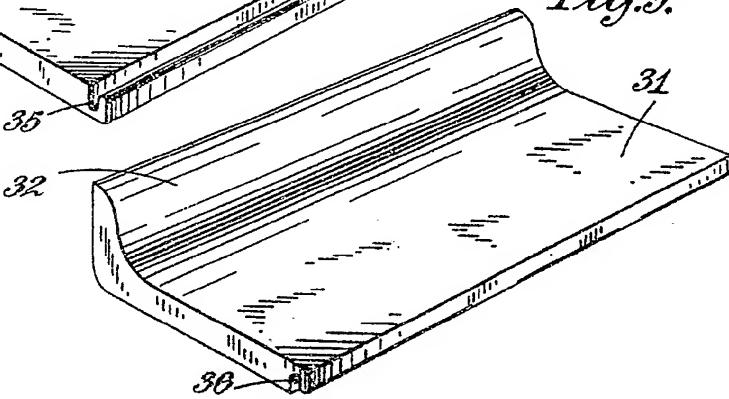


Fig.9.



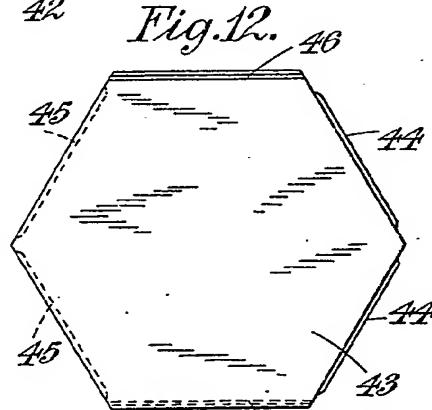
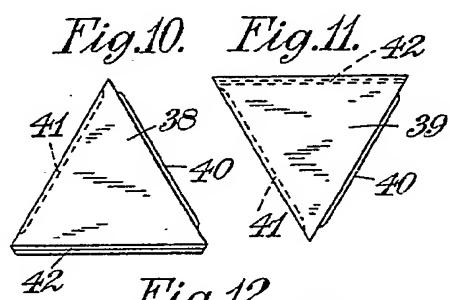
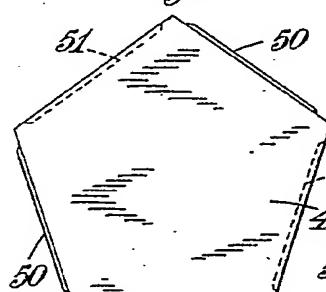
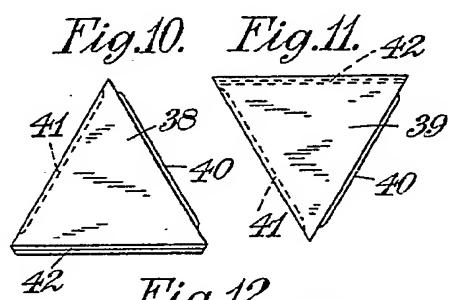
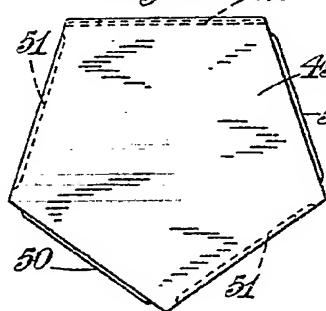
*Fig.13.**Fig.14.*
*Fig.15.*

Fig.21.

Fig.17.

Fig.18.

Fig.19.

Fig.20.

Fig.21.

Fig.22.

Fig.23.

Fig.24.

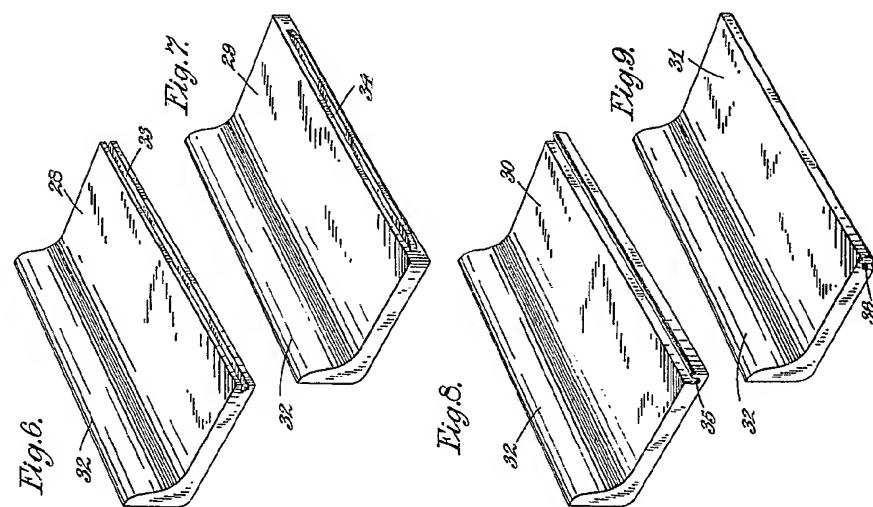
Fig.25.

Fig.26.

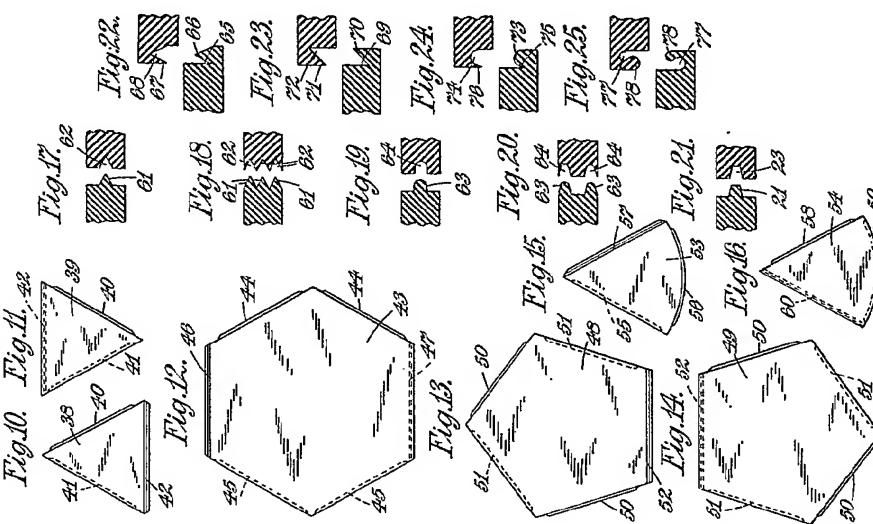
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SHEET 3



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PATENT SPECIFICATION

647,812



Date of filing

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PROVISIONAL SPECIFICATION

Improvements in or relating to Flooring or like Tiles.

I, WILLIAM SIMON FREEMAN, of Subseal Works, Peel Street, Barnsley, Yorkshire, a British Subject, do hereby declare the nature of this invention to be as follows:—

5 This invention is for improvements in or relating to flooring or like tiles and is particularly concerned with tiles made of rubber.

It has already been proposed to provide rubber tiles with lateral ribs and grooves for interlocking 10 when laid. It has also been proposed to provide rubber paving blocks with vertically interlocking channels and ribs.

An object of the present invention is to render the interlocking of the tiles more effective than 15 heretofore has been the case.

According to the primary feature of the invention there is provided a flooring or like tile whereof the periphery of the two main faces is composed of three or more lengths, straight or 20 curved, adjacent pairs of which join at corners of the tile, which tile is characterised in that at least one of said lengths has a lateral rib extending along its edge face, at least one other length has a corresponding lateral groove extending along 25 its edge face, and at least one other length has extending beside it a channel in one of the main faces of the tile leaving a rib between the channel and the edge face. With tiles so made, it will be appreciated that adjacent tiles in an assembly 30 will have lateral ribs and grooves interlocking and vertical ribs and channels interlocking, and thus the stability and coherence of the assembly will be enhanced. The ribs, grooves and channels will usually have rounded edges and corners and 35 they may extend wholly or only partly along the peripheral lengths of the tiles to which they are appropriated.

When the tiles have more than three of the aforesaid peripheral lengths each, there is a range 40 of choice in the allocation of the interlocking formations, the range increasing with the number of the said lengths per tile, but when the periphery includes opposed parallel lengths each of which has extending beside it one of the said channels, 45 it is preferred to arrange that the two channels are located one in each of the main faces of the tile.

A triangular tile according to the invention will have one of the lengths of its periphery provided with a lateral rib extending along its edge 50 face, another length provided with a corresponding lateral groove extending along its edge face, and the third length will have extending beside it a channel in one of the main faces of the tile leaving a rib between the channel and the edge 55 face. If the lateral rib and the lateral groove are located midway of the thickness of the tile and if the channel is of corresponding width and cross-sectional shape to that of the rib left between it and the edge face of the tile, this triangular tile will be reversible. This reversibility simplifies manufacture and assembly and obviates the necessity for providing stocks of differently ribbed, grooved and channelled triangular tiles.

A reversible square or oblong tile according 65 to the invention may have one of the lengths of its periphery provided with a lateral rib extending along its edge face, the opposite length provided with a corresponding lateral groove extending along its edge face, and the two other parallel 70 lengths will each have extending beside it a channel, one in one main face of the tile and the other in the other main face of the tile, leaving a rib between the channel and the edge face, the relative shapes and dimensions of the ribs, groove and 75 channels being as defined above in connection with the triangular tile.

A reversible regular hexagonal tile according to the invention may have two adjacent lengths of its periphery each provided with a lateral rib 80 extending along its edge face, the two opposite lengths each provided with a corresponding lateral groove extending along its edge face, and the two other parallel lengths will each have extending beside it a channel, one in one main 85 face of the tile and the other in the other main face of the tile, leaving a rib between the channel and the edge face, the relative shapes and dimensions of the ribs, grooves and channels being as defined above in connection with the triangular 90 tile.

A reversible regular pentagonal tile according to the invention may have a lateral rib and a lateral groove alternating on four consecutive lengths of

the periphery and the fifth length will have extending beside it a channel in one of the main faces of the tile leaving a rib between the channel and the edge face, the relative shapes and dimensions of the ribs, grooves and channel being as defined above in connection with the triangular tile.

A sector-shaped tile according to the invention may have one of the straight lengths of its periphery provided with a lateral rib extending along its edge face, the curved length provided with a corresponding lateral groove extending along its edge face, and the other straight length will have extending beside it a channel in one of the main faces of the tile leaving a rib between the channel and the edge face.

Whatever the peripheral contour of the tile may be, it is preferred to arrange that lateral ribs and grooves on the edge faces stop short of the corners. The channels in the main faces, however, may extend fully across the tile except when

these channels are along adjacent lengths of the periphery in which case it is preferred that they shall not overlap. The depth of the channel as measured from one main face of the tile should not be less than the height of the corresponding rib as measured from the other main face of the tile, in reversible tiles. The side walls of the channels and of their corresponding ribs will usually be parallel but they need not be at right-angles to the main faces of the tile as in some circumstances it is advantageous to have the channels slightly undercut in the direction of the main body of the tile, with the walls of the corresponding ribs parallel to the walls of the channels.

It is to be understood that the invention is not restricted to the precise constructional details set forth.

Dated this 9th day of August, 1948.
BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London, E.C.1.
Chartered Patent Agents.

COMPLETE SPECIFICATION.

Improvements in or relating to Flooring or like Tiles.

I, WILLIAM SIMON FREEMAN, of Subaseal Works, 40 Peel Street, Barnsley, Yorkshire, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention is for improvements in or relating to flooring or like tiles and is particularly concerned with tiles made of rubber.

It has already been proposed to provide rubber tiles with lateral ribs and grooves for interlocking when laid. It has also been proposed to provide rubber paving blocks with vertically interlocking channels and ribs.

An object of the present invention is to render the interlocking of tiles more effective than has heretofore been the case.

According to the primary feature of the invention there is provided a flooring or like tile whereof the periphery of the two main faces is composed of a plurality of lengths, straight or curved, adjacent pairs of which join at corners of the tile, which tile is characterised in that at least one of the said lengths has a lateral rib or a lateral groove along its edge face, and at least one other length has extending beside its edge face a channel in one of the main faces of the tile, leaving a rib between the channel and the edge face.

According to another feature of the invention there is provided a flooring or like tile whereof the periphery of the two main faces is composed of three or more lengths, straight or curved, adjacent pairs of which join at corners of the tile, which tile is characterised in that at least one of the said lengths has a lateral rib along its edge face, at least one other length has a corresponding lateral groove along its edge face, and at least one other length has extending beside its edge face a channel in one of the main faces of

the tile leaving a rib between the channel and the edge face.

With tiles made according to the aforesaid features of the invention, it will be appreciated that adjacent tiles in an assembly will have lateral ribs and grooves interlocking and vertical ribs and channels interlocking, and thus the stability and coherence of the assembly will be enhanced. The ribs, grooves and channels may in some cases have rounded edges and corners and they may extend wholly or only partly along the peripheral lengths of the tiles to which they are appropriated.

When the tiles have more than three of the aforesaid peripheral lengths each, there is a range of choice in the allocation of the interlocking formations, the range increasing with the number of the said lengths per tile, but when the periphery includes opposed parallel lengths each of which has extending beside it one of the said channels, it is preferred to arrange that the two channels are located one in each of the main faces of the tile.

For a more complete understanding of the invention, there will now be described, by way of example only and with reference to the accompanying drawings, various alternative forms of tiles embodying the invention. It is to be understood, however, that the invention is not restricted to the precise constructional details set forth.

In these drawings:—
Fig. 1 is a perspective view of a square tile, looking on to one corner thereof,

Fig. 2 is a corresponding view of the tile shown in Fig. 1, but looking on to the diagonally opposite corner,

Fig. 3 is a plan view on a scale smaller than that of Figs. 1 and 2, showing an assembly of square and oblong tiles with a surround,

Fig. 4 is a section on the line 4—4 of Fig. 3, but on the same scale as that of Figs. 1 and 2.

Fig. 5 is a similar section on the line 5—5 of Fig. 3,

5 Figs. 6—9 are perspective views, on the same scale as that of Figs. 1 and 2, of alternative sections of a surround,

Figs. 10 and 11 are plan views, on a scale smaller than that of Figs. 1 and 2, of two complementary triangular tiles,

Fig. 12 is a corresponding plan view of a hexagonal tile,

Figs. 13 and 14 are corresponding plan views of two complementary pentagonal tiles,

15 Figs. 15 and 16 are corresponding plan views of two complementary sector-shaped tiles,

Figs. 17—21 are detail composite views of alternative forms of lateral ribs and grooves, and

20 Figs. 22—25 are detail composite views of alternative forms of vertical channels and ribs.

Like reference numerals indicate like parts throughout the drawings.

Referring firstly to Figs. 1 and 2, the tile 20 thereon shown is reversible. One of the lengths 25 of its periphery is provided with two separated lateral ribs 21 and 22 aligned along its edge face, the opposite length is provided with a lateral groove 23 extending along its edge face, and each of the two other parallel lengths has extending 30 beside it a channel, one 24 in one main face of the tile and the other 25 in the other main face of the tile, leaving a rib 26 between the channel and the edge face.

The lateral ribs 21 and 22 and the lateral 35 groove 23 are located midway of the thickness of the tile and are of corresponding rectangular or slightly tapered cross-section, the corners of the ribs being chamfered or rounded. A suitable slightly tapered cross-section is shown in Fig. 21. 40 The channels 24 and 25 are of corresponding width and rounded cross-sectional shape to that of the ribs 26 left between them and the edge faces of the tile. The tile, therefore, is reversible. This reversibility simplifies manufacture and 45 assembly and obviates the necessity for providing stocks of differently ribbed, grooved and channelled square tiles.

Referring now to Fig. 3, in the assembly therein shown, the square tiles 20 are arranged in staggered 50 formation, the lateral ribs 21 and 22 in the one tile engaging in lateral grooves 23 in two separate tiles. This staggered formation, which though desirable is not essential, facilitates stability. It entails the presence of half or oblong tiles 27, 55 the peripheries of which are shaped to correspond with the square tiles except of course that there is only one lateral rib 21 or 22.

Figs. 3—5 shown in place a surround made up of sections 28, 29, 30, and 31, or parts thereof, 60 these sections being shown in detail in Figs. 6—9. Each section has a raised edging 32. The section 28 has in its edge which is to engage the tile, a lateral groove 33 corresponding with the afore-said groove 23. The section 29 has a lateral rib 65 34 corresponding with the ribs 21 and 22. The

section 30 has an upwardly-facing channel 35 corresponding with the channel 24 and the section 31 has a downwardly-facing channel 36. Thus appropriate sections of the surround may be fitted to the tiles to interlock therewith. Small 70 filling sections of the surround are shown at 37. They may be secured in place by adhesive.

Referring now to Figs. 10 and 11, there are shown therein two complementary triangular tiles, 75 38 and 39. Each of these tiles has one of the lengths 40 of its periphery provided with a lateral rib 40 extending along its edge face, another length provided with a corresponding lateral groove 41 extending along its edge face, and the third length has extending beside it a channel 42 in 80 one of the main faces of the tile leaving a rib between the channel and the edge face. The relative shapes and dimensions of the rib, groove and channels are as defined above in connection with the square tile. In the tile 38, the channel 42 85 is formed in a part of the material which is extra to the true equilateral triangular shape so that its rib may engage in the channel 42 in the tile 39, which latter channel 42 is inside the equilateral formation.

A reversible hexagonal tile 43 according to the invention is shown in Fig. 12. It has two adjacent lengths of its periphery each provided with a lateral rib 44, extending along its edge face, the two opposite lengths each provided with 95 a corresponding lateral groove 45 extending along its edge face, and the two other parallel lengths have extending beside them channels 46 and 47, one in one main face of the tile and the other in the other main face of the tile, leaving a rib 100 between the channel and the edge face, the relative shapes and dimensions of the ribs, grooves and channels being as defined above in connection with the square tile. The channel 46 is formed in a part of the material which is extra to the 105 regular hexagonal shape so that its rib may engage in the channel 47 in the next adjoining tile 43, which channel 47 is inside the regular hexagonal formation.

Referring now to Figs. 13 and 14, there are 110 shown therein two complementary pentagonal tiles 48 and 49 according to the invention. Each of these tiles has a lateral rib 50 and a lateral groove 51 alternating on four consecutive lengths of the periphery and the fifth length has extending 115 beside it a channel 52 in one of the main faces of the tile leaving a rib between the channel and the edge face, the relative shapes and dimensions of the ribs, grooves and channels being as defined above in connection with the square 120 tile. In the tile 48, the channel 52 is formed in a part of the material which is extra to the regular pentagonal shape so that its rib may engage in the channel 52 in the tile 49, which latter channel 52 is inside the regular pentagonal formation.

In Figs. 15 and 16 there are shown two complementary sector-shaped tiles 53 and 54 according to the invention. The tile 53 has one of the straight lengths of its periphery provided with a lateral groove 55 extending along its edge face, 130

the curved length provided with a corresponding lateral rib 56 extending along its edge face, and the other straight length has extending beside it a channel 57 in one of the main faces of the tile 5 leaving a rib between the channel and the edge face. The tile 54 has one of the straight lengths of its periphery provided with a lateral rib 58 extending along its edge face, the curved length provided with a corresponding lateral groove 59 10 extending along its edge face, and the other straight length has extending beside it a channel 60 on one of the main faces of the tile leaving a rib between the channel and the edge face. In the tile 53, the channel 57 is formed in a part 15 of the material which is extra to the regular sector-shape so that its rib may engage in the channel 60 in the tile 54, which latter channel 60 is inside the regular sector formation.

Whatever the peripheral contour of the tile 20 may be, it is preferred to arrange, as shown in Figs. 1 and 2 that the lateral ribs and grooves on the edge faces stop short of the corners. The channels in the main faces, however, may extend fully across the tile except when these channels 25 are along adjacent lengths of the periphery in which case it is preferred that they shall not overlap. The depth of the channel as measured from one main face of the tile should be not less than the height of the corresponding rib as measured 30 from the other main face of the tile, in reversible tiles.

Instead of the lateral ribs 21 (or 22) and grooves 23 being of rectangular or slightly tapered cross-section as shown in Figs. 5 and 21, a single angular 35 lateral rib 61 may co-operate with a single angular lateral groove 62 as shown in Fig. 17, or as shown in Fig. 18 there may be several angular ribs 61 co-operating with corresponding grooves 62. Alternatively, as shown in Fig. 19, a single lateral 40 rib 63 of rounded cross-section may co-operate with a single correspondingly-shaped groove 64, or there may be two rounded ribs 63 co-operating with two corresponding grooves 64 as shown in Fig. 20.

45 Instead of the channels 24 and 25 and the ribs 26 being of rounded cross-section as shown in Figs. 1, 2 and 4 they may be of other forms. For instance, as shown in Fig. 22, in one tile there may be an angular channel 65 and an angular 50 rib 66, and in another tile there may be a complementary angular rib 67 and a complementary angular channel 68. Fig. 23 shows a rather simpler angular construction in which one tile has an angular channel 69 and an angular rib 70 and the 55 other tile has a complementary angular rib 71

and a complementary angular channel 72. In Fig. 24, although the rib 73 and channel 74 are rounded, the channel 75 and rib 76 are angular.

Fig. 25 shows a variation of the construction shown in Figs. 1, 2 and 4, which in some circumstances it is advantageous to adopt. In Fig. 25 the channels 77 are slightly undercut and the ribs 78 have to be sprung into place on assembly.

It is to be understood that the invention is not restricted to the precise constructional details set forth.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A flooring or like tile whereof the periphery of the two main faces is composed of a plurality of lengths, straight or curved, adjacent pairs of which join at corners of the tile, characterised in that at least one of the said lengths has a lateral 75 rib or a lateral groove along its edge face, and at least one other length has extending beside its edge face a channel in one of the main faces of the tile, leaving a rib between the channel and the 80 edge face.

2. A flooring or like tile whereof the periphery of the two main faces is composed of three or more lengths, straight or curved, adjacent pairs of which join at corners of the tile, characterised in that at least one of the said lengths has a lateral 85 rib along its edge face, at least one other length has a corresponding lateral groove along its edge face, and at least one other length has extending beside its edge face a channel in one of the main faces of the tile, leaving a rib between the channel 90 and the edge face.

3. A tile according to Claim 1 or Claim 2 whereof the periphery includes opposed parallel lengths each of which has extending beside its edge face one of the said channels, characterised 95 in that the two channels are located one in each of the main faces of the tile.

4. The flooring or like tiles substantially as described with reference to Figs. 1—5 and 21 or Figs. 10 and 11, or Fig. 12, or Figs. 13 and 100 14, or Figs. 15 and 16, or substantially as described with reference to any of these Figures but modified as shown in Fig. 17, or Fig. 18, or Fig. 19, or Fig. 20, or Fig. 22, or Fig. 23 or Fig. 24, or Fig. 25 of the accompanying drawings.

Dated this 10th day of June, 1949.

BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London, E.C.1.,
Chartered Patent Agents.